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EDUCATIONAL TRAINING MANUAL No. 8

EDUCATION STAFF TRAINING DEVELOPMENT PROGRAMME

MONITORING AND EVALUATION OF EDUCATIONAL SYSTEMS

LC/NAIROB

UNITED NATIONS
Economic Commission for Africa
February 1988

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PART ONE

Monitoring and Evaluation of Educational Systems

I. Introduction:

This paper attempts to focus attention on evaluation as the process of delineating, obtaining, and providing useful information for making judicious decisions, about alternatives in education. It looks at evaluation as a process or cluster of processes enacted to provide data so that decisions can be made as to whether something should be accepted, changed, or eliminated. Implicit in this definition is the process of ascertaining the relative values of whatever is being judged. Generally, evaluation aims at determining whether the expected, the planned for, has occurred or is occurring in relation to the intended outcomes. When applied to education, evaluation is the process/processes used for discovering the extent to which education as designed, developed and implemented is producing or can produce the desired/intended results in terms of knowledge skills, attitudes and behaviours in student/learners. In essence then, evaluation focuses on the strength and weaknesses of an educational system, its internal and external effectiveness.

On the other hand, monitoring, often called maintenance, encompasses the methods and means by which an education system is managed to ensure its continued effective functioning. Essentially, monitoring attends to the activities of students, teachers and education personnel in response to the ongoing system and their respective responsibilities as regards the continued success of the system, its programmes and activities.

This paper therefore will look at:

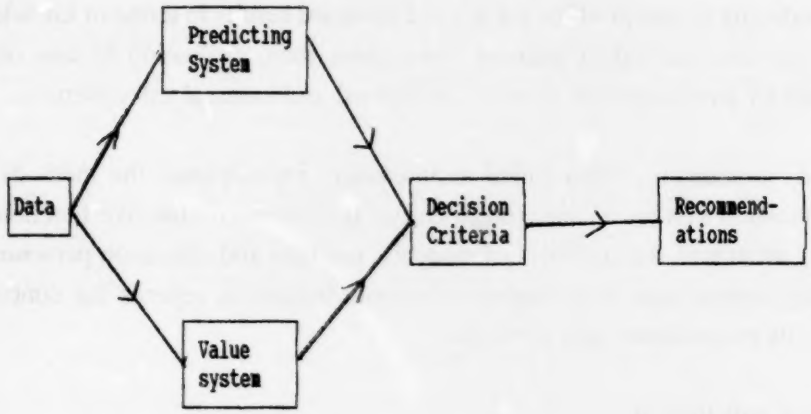
(1) the nature, purpose and methodology of evaluation;
(2) the decisive factors in the internal effectiveness of an educational system;
(3) the criteria for evaluating educational policies, aims and programmes;
(4) Systematic approach to goal analysis and evaluation of educational programmes;
(5) Evaluating the internal and external efficiency of an educational system;
(6) how to assess the expected outcomes of education, and
(7) Monitoring the education system.

II. Nature, purpose and Methodology of Evaluation

In education, evaluation should not solely be equated with the measurement. It should extend beyond the professional judgement of assessing the expected outcomes of education, because central to the issue of evaluation is decision making. It allows the educator to identify alternative education actions which have promise of greater benefits in the light of overall aims and goals of education. In evaluation, the decision maker obtains data which will allow him to select programmes or activities with proven effectiveness in equipping learners with the right knowledge, skills and attitudes for a productive life.

One, however, has to develop competence in decision making to be able to make such choices. The process of decision making may be represented thus:

Figure 1: The Total Process of Decision Making



(a) Purpose of evaluation

When evaluation is done properly, it should provide information to enable one to decide whether to address a particular need or not, whether to create a programme or not; to continue with it; to modify it or to terminate it. Several purposes of evaluation may therefore be identified viz:

(i) to increase the substantive knowledge base regarding the education process and the functioning of this education system.

(ii) to furnish information which will facilitate making decisions as to whether to continue, adjust or discard an on-going programme in the education system;

(iii) to provide justification for a political, social economic and educational action relating to education programmes;

(iv) to create a report which can be utilized by all appropriate persons in the education system resulting in the introduction and continuance of effective education programmes;

(v) to general information that can be employed in educating the community as to the rationale for a particular programme, and the effectiveness of education programmes.

(1) Why we evaluate

Conversely, it may be asked as to why we evaluate at all? To which question the answer may be put thus: We evaluate to:

- generate information so as to make a decision about a programme continuation;
- disseminate information about the effectiveness of a programmes;
- furnish information about programme continuation regarding student learning, instructional materials, curriculum content, methods of teaching, learning experiences, etc.
- to find out how far the objectives, aims and goals of the educational system have been fulfilled.

(2) Whom do we evaluate

When it may be easy to answer the question of why do we evaluate, it is not so much easy to answer the other question: Whom do we evaluate ? From the educational point of view we evaluate:

(i) Teachers - as regards their training i.e. their professional preparation for a teaching assignment;

- knowledge skills and attitudes for effective performance of their duties;
- classroom management for effective enhancement of education;
- interpersonal relations with learners, administrators, inspectors/supervisors, other education staff and the community;
- professional ethics in terms of commitment to duty; code of conduct; helping pupils/students; in writing exercises and fostering learning.

(ii) Students/learners

- evaluating the intended outcomes of education;
- achievement in terms of knowledge, skills and behaviours;
- preparedness and suitability for productive life;
- learning processes as regards rates and styles of learning, motivation etc.
- performance regarding assignments and tasks;
- mastery of learning experiences;
- mastery of curriculum content.

(iii) Administrators/education personnel

- school management in terms of control and management of schools, financial management etc.;

- administration in respect of school rules and regulations, admission procedures, administrative directives, educational policies, aims and objective of education;

- guidance and counselling if given an important role in education;

- provision of education and facilities, human, financial and material;

- conditions of service for education or personnel and welfare of students/learners in schools;

- supervision and inspection of schools how effective these are;

- channels of communication between/and with schools and provision of services etc.

(iv) Community

- community's participation in education as members of school boards, parents/teachers associations; advisory committees etc.

- assistance to schools relative to finance, school building and maintenance, self-help programmes, provision of instructional materials etc.;

- formulation of educational policies, aims and goals;

- participation in educational activities;

- the impact of the commodity and its environment on the learning experiences of a school.

(3) What to evaluate

Having looked at whom to evaluate, it becomes necessary to examine what to evaluate within an educational system. In this paper what to evaluate in the educational system is confirmed to the clusters or subsets of (1) planning or conceptualization of the system (2) policies, goals and objectives of the system (3) curriculum and instruction (4) expected outcomes of education i.e. student performance attainment/achievement (5) teacher effectiveness and competencies to effect learning (6) administration, management and supervision of the system (7) environments i.e. both school and community environments, facilitates, instructional materials and equipment and (8) use of educational resources(human, financial and material).

1. Planning/conceptionalization of the system

In this regard, evaluation should measure the extent to which:

- the philosophy of education of the country is based on national development goals and objectives;

- evaluation reflect the concurs, preoccupations and national needs;

- educational system is fully responsive to individual and national needs;

- education is effectively used as an instrument for achieving important national development goals, and

Through effective planning there is policy too train and produce quality teachers, curriculum planners and evaluators, supervisors and inspectors, administrators, and provide for instructional materials and equipment.

2. Policies, goals and objectives

Evaluation of policies, goals and objectives can measure the extent to which:

- there is coherence between, on the one hand, the objective of the educational system, the means devoted to them, and the results gained from them: and on the other, the main economic and social objectives of a development plan;

- the planned main goals were fulfilled in relation to estimated total costs;

- the planned production targets were achieved in relation to estimated direct costs;

- real productivity was achieved in relation to real direct costs;

- there was real fulfilment of main goals/sub-goals in relation to real total costs;

- the educational policy followed is feasible and capable of fulfilment;

- the educational policy followed brings greater benefit to the individual or society at lesser cost than pursuing a different policy;

- short term, long term, process goals and product goals are effectively fulfilled;

3. Curriculum and Instruction

Evaluation of curriculum can measure the extent to which:

- curriculum goals as long-range aims are classified, and differentiated from objectives as specific immediate learner behavioral outcomes;

- goals and objectives are an integral part of the process of curriculum and instructional planning, development and supervision, examination and evaluation;

- goals and objectives in curriculum can accommodate hieravehieal cognitive, affective and psychomotor domains;

- curriculum decisions are effectively implemented;

- curriculum reflects the culture content of society;

- learning has been achieved;

- subject content or skill is best learned;

- pupils involvement reflects their readiness and ability to learn subject content;

- lesson preparation notes reflects teachers competencies in directing learning;

- teachers preparedness reflects quality of training and professional commitment;

- pupils performance reflects the quality of education received and learning which has taken place.

4. Achievement/performance or expected outcomes of education

It is possible to evaluate the expected outcomes of education by direct reference to the objectives: Social, educational, pedagogical, cultural, economic, political etc. - which the education system as a whole, or its various sub-systems propose to attain. This approach can be used to evaluate educational programmes or courses. It assumes that one can clearly identify the objectives of the educational system but which are usually implicit or couched in very general terms. It also assumes that indicators/indices of performances or for assessing the fulfilment of objectives have been established. Generally, an evaluation is made to find out how well the expected outcomes of education have been fulfilled, although this is normally done through assessment, tests, and other forms of measurement and examinations.

5. Effectiveness and Efficiency

Evaluation of teacher effectiveness should include an assessment of the training and qualifications of teachers, their competencies in lesson preparation, lesson development and presentation, classroom management and discipline, skills in supervising, questioning and directing pupils learning, correcting pupils work and assignments; competence in the use of visual and other teaching aids, use of the blackboard motivating learning, and arousing their interest in learning; preparation of schemes of work to reflect clear interpretation of the syllabus and the students learning needs. etc.

Evaluation of teachers skills and competencies in guiding and directing learning of the various disciplines; facts,. concepts study skills, thinking and reasoning i.e. their effectiveness in guiding learning in the three domains: cognitive, affections and psychomotor.

6. Administrative and organization/structure

Evaluation of the system should include the administrative and organizational structure of the delivery system various factors are likely to affect the efficient functioning of the system viz:

- the degree of centralization or decentralization will have effect on the way schools are run;

- the administrative and organizational structure of the systems;

- educational policy regarding planning, curriculum development and evaluation, examinations and accreditation; training and recruitment of teachers, conditions of service for education personnel; admission and promotion of pupils; provision, procurement and distribution of school supplies;

- education policy on pre-service and in-service training;

- channels of communication;

- provision of instructional materials, equipment and school supplies;

- responsibility for building and maintenance of instructional, boarding and recreational facilities;

- sources of funds for education function;

- co-ordinative, collaboration and co-operative of education programmes activities - formal, non-formal or special education;

- responsibilities for the different levels and sectors of evaluation.

7. Environments

Evaluation of environments will determine the extent to which:

- school environments i.e. space, instructional facilities, and boarding recreational facilities affect/influence learning function;

- availability or lack of equipment and materials affect learning;

- the unpleasant or pleasant school situation influence pupils learning;

- community environment is the home, including, religion, politics, kth economy and social backgrounds affect/influence learning. Often those can hinder or foster learning.

8. Utilization of Educational Resources

Evaluation of educational resources will determine the extent to which human, financial and material resources are optimally utilized. How much of the resources allocated to education are utilized for the promotion of learning. Can maximum social, educational or economic benefits be achieved given the available resources? These questions and many more from the basis for an evaluation of educational reasons.

(b) Methodology of Evaluation

Five components of evaluation methodology may be examined. The first focuses on the educational system phenomena to be evaluated and, the range of evaluation activities requisite. This is the generation of the management plan or procedural design for the evaluation process which maps the settings within which the evaluation process is to occur by:

- spelling out the objectives of the evaluation activity and;

- the noting of constraints and policies under which the evaluation must be conducted.

In short, this the focus on evaluation.

The second major component of evaluation methodology is selection and collection of information involving:

(i) identifying the sources of information essential for consideration and noting the state of current information;

(ii) identifying the means for collecting information e.g. tests, interviews, observations etc.

(iii) noting the procedures available and methods for obtaining information and

(iv) developing a mission profile for carrying out these steps.

The third component is organization of information involving the means by which collected data will be classified, organized, recorded and retrieved. The fourth component is analysis of data by employing appropriate analysis teaching, which can range from computers a groups mean score on an achievement test to factor analysis to isolate factors influencing student learning or performance. Finally the fifth component of evaluation methodology is reporting of data/information to those for whom the evaluation is intended.

In the administration of the foregoing five components of evaluation methodology, one can follow twelve events for evaluating an educational system viz:

(i) activating an education evaluation plan;

(ii) determining the five components described above;

(iii) identifying staff and staff requirements necessary for conducting the evaluation of the education system;

(iv) determining the evaluation schedule;

(v) identifying resources required for the evaluation;

(vi) identifying education policy which will affect the evaluation;

(vii) defining the means of addressing educational policy during evaluation process;

(viii) finalizing the evaluation design to be employed;

(ix) finalizing the evaluation schedules;

(x) determining the budget requirements for the evaluation;

(xi) obtaining the necessary budget;

(xii) activating the five curriculum evaluation components as described earlier;

On the whole, the general approach toe valuation is basically the same irrespective of the focus of such evaluation. In this regard a breakdown of evaluation may be delineated as follows:

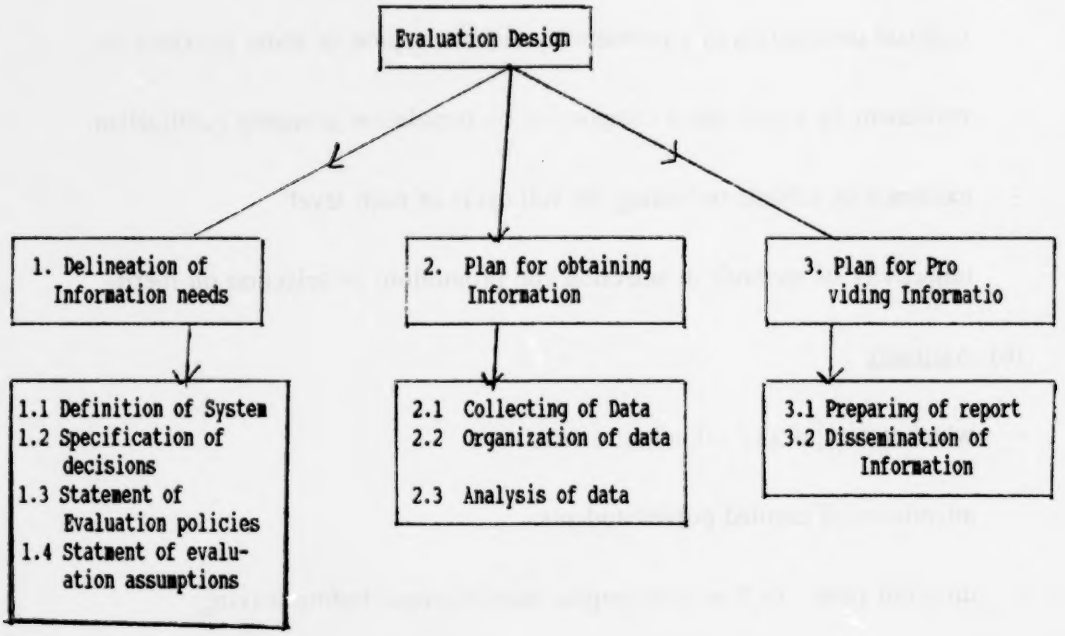

Evaluation Design
1. Delineation of Information needs
2. Plan for obtaining Information
3. Plan for Pro viding Informatio
1.1 Definition of Systen
1.2 Specification of decisions
1.3 Statement of Evaluation policies
1.4 Statment of evaluation assumptions
2.1 Collecting of Data
2.2 Organization of data
2.3 Analysis of data
3.1 Preparing of report
3.2 Dissemination of Information

Figure 2: Breakdown of Evaluation

III. Decisive Factors in the Internal Effectiveness of Education Systems

Often the indicators of internal effectiveness of an education system are the result of the conditions which exist within a given system. In this regard, the decisive factors in internal effectiveness could be grouped into six categories although others may analyze them differently. This paper gives a brief description of those factors viz:

1. Pupils/students

Five decisive factors may be considered in respect of this category as follows:

(a) Access to education

- Whether there are enough places;
- enrolment by sex at the various levels of the education system;
- regional distribution or enrolment by district, region or state/ province etc.
- enrolment by social status category or by population grouping rural/urban;
- existence of schools providing the full cycle of each level;
- objectivity of methods of selection and promotion; or selection on merit.

(b) Assiduity

- whether compulsory schooling exists;
- attendance of enroled pupils/students;
- drop-out rates - or how long pupils, stay at school before leaving;
- repetition rates or re-enrolment of pupils who have left and want a second chance;
- complementarity of formal and non-formal education.

(c) Student Results

- determination of the degree of development of the three domains i.e. cognitive, affective and psychomotor domains;
- determination of the degree and progress of effectiveness in the three domains;
- determination of attitudes

(d) Service rendered by the school to pupils

- eg. boarding and recreational facilities;
- guidance and counselling;
- pupil - teacher relations;
- health and other services;
- transport.

(e) Pupil/student Reactions

- Pupils/students own statement of their impressions about the effectiveness of education received;
- behaviour and actions of pupils during schooling, out of school, and after school.

2. Teachers and other staff

The following decisive factors may be considered:

(a) Selection and qualifications

- criteria for selection to teacher training;
- teachers qualifications needed to fulfil education aims, goals and objectives;
- status of their theoretical and practical training.

(b) Staffing and staff development

- how teachers are recruited;
- salary structure, incentives and other benefits;
- staff training including in service courses;

- promotions, and moves to posts of responsibility.

(c) Staff-student relations

- how satisfactory they are;

- treatment of students and students respect of staff.

(d) Teaching methods/loads

- teachers competence in conducting lessons;
- preparation of lesson plan;
- use of various teaching methods;
- use of teaching/visual aids;
- how many periods per week teachers take;
- use of theory and practice.

(e) Teachers Professionalism

- professional commitment;
- correcting and marking assignments;
- helping pupils; care of pupils;
- preparedness for teaching in the course of year;
- adherence to code of conduct;
- punctuality

(f) Support staff

- how satisfactory technical support is;
- relationship between academic and support staff;
- channel of communication.

3. Curriculum

Under this item, three major decisive factors may be observe:

(a) Format and content of curricula and syllabi

- course objectives being expressed clearly in relation to individual and national needs;
- whether content of curricula and syllabi satisfy course objectives;
- whether subject content, learning objectives, and performance measures are clearly and adequately expressed.

(b) Quality of curricula and syllabi

- how well the major practical skills are covered;
- how effective curricula are in developing the three domains cognitive, affective and psychomotor;
- how well the different subjects in the course are co-ordinated;
- whether there is balance between theory and practice and balance in time allocation to different subjects;

(c) Review/revision of curricula and syllabi

- how regular are curricula an syllabi reviews/revisions;
- when was the last review made to curriculum or the syllabus;
- necessary revision in the light of information obtained as a result of evaluation.

4. Administration and organization

This may be looked at from four decisive factors:

(a) Aims, Goals, Objectives and Plans

- how well articulated these are on all educational issues e.g. on student performance admission, recruitment of teachers, examination/assessment etc.

(b) Organizational structure

- the effect of organization structure on management of education;
- centralized or decentralized system;

(c) Information system

- how well informed are teachers pupils or students about education policy, examination, resource utilization etc.;
- use of available information for decision making etc.

(d) Management style and effectiveness

- whether students/staff exhibit a sense of purpose and understanding of the objectives;
- how learning and school performance are affected by the style of management.

5. Physical Resources

Six decisive factors in respect of this category may be examined:

(a) Teaching facilities

- classrooms, laboratories, workshops, preparation rooms etc. their state and availability;

(b) Support Facilities

- Administration, library, recreational, common rooms, staff rooms, hostels, dining rooms etc. how good they are or whether available.

(c) Utilization of space

- optional utilization of libraries, classrooms, laboratories, workshops, cafeteria etc.

(d) Provision of Equipment

- how comprehensive is the range of equipment provided;
- adequacy of such equipment;
- maintenance of equipment provided.

(e) Equipment utilization

- optional utilization of equipment;
- relevance of equipment to course needs;
- availability of spare parts and service crew.

(f) Consumable materials

- how satisfactory the distribution of materials is;
- ease of availability of materials;
- effective use of material made available.

6. Parents and community

Decisive factors which may be considered under this category include:

- parents and community's participation in education;
- parents'/community's responsibilities for education;
- their contribution, both financial and material, to education;
- their reactions and responses to education programmes and activities etc,.

This paper cannot explore all the decisive factors for internal effectiveness of education as the list is too long. Suffice to say here that the fore-going are among the many factors which should be taken into account.

IV. Criteria for evaluating educational policies, aims and programmes

A lot of argument, criticism or talk have been heard or written about the relevance of education to the socio-economic and cultural needs of individuals and society; the universalization of education and/or extending educational opportunities tot he majority of the people; diversity and co-ordination of education; and the optional utilization of resources. These arguments have direct reference to the aims, objectives and policies of education and the kind of programmes undertaken in schools. In evaluating education policies therefore, it is necessary to examine the major criticisms against educational systems and then examine the possible criteria for evaluating the effectiveness of education systems.

1. Major Criticisms against Education Systems

Criticisms against education have arisen as a result of:

(a) the emergence of the problem of having to employ school leavers without vocational orientation in productive and socio-economic activities;

(b) the continuing rise in the number of unemployable university graduates and the rising tendency for them to pick jobs requiring lower qualifications;

(c) the alienation of higher education products from communities and cultural heritage and the accusation of their living in ivory towers;

(d) the increasing track of school leavers to cities and towns in search for white-collar employment and a dislike for blue-collar or manual work: the general drift from rural areas to peri-urban and urban areas;

(e) lack of greater opportunities for those with identifiable physical facilities and at worse, lack of system for early detection of metal disabilities;

(f) the general failure by education in achieving those individual competence necessary to lead a successful and creative life and for economic growth and hence the continued importation of expertise;

(g) the ever increasing demand for financial allocations to education which threatens allocations to other sectors of the economy;

(h) the inability of the educational system to match the increased rate of population growth and meet increased demands for educational opportunities.

A number of reasons may be given for the emergence of the above indicators of malfunctioning of education systems in many developing countries viz:

(i) Education system are not adapted to national development

Much of Africa is primarily agricultural and yet education systems give little emphasis on agricultural subjects and continue to turn away from rural activities the products of the education system. Schools continue to educate for white collar jobs rather than in productive life in rural areas. The curricula tend to be inappropriate to the demand and requirements of social and economic growth. There is less emphasis on technical/vocational education rather than general education.

(ii) Education systems are not adapted to the means available

Most African education systems are expensive to maintain, let alone keep the momentum of development. Resources, particularly in higher institutions are not optionally utilized showing in some cases, high drop-out and repetition rates; under or over utilization of teachers/tutors instructional facilities and equipment. Education development follows a strategy of linear expansion which has tended to be very expensive to maintain and has perpetuated an elitist form of education.

(iii) Enormous Means Employed for a low out-put

Unit costs particularly in higher institutions are very high and are not in with the quality of education offered. Fewer pupils/students complete the school cycle: they drop or repeat thereby making unit costs high. Although there have been appreciable increases in enrolments, the number (in absolute terms) of illiterates in Africa has continued to increase.

(iv) The system produce large numbers of ill-equipped and frustrated peoples

Methods of selecting students, examinations, and methods of teaching continue to produce ill-equipped, ill-prepared people and lacking is knowledge, skills and attitudes for gainful employment or productive life either in rural or urban areas. There is an imbalance also, between theory and practice so that those who come out of the system do not posses knowledge, skills and attitudes for income generation, self employment or engaging in productive activities and hence, the frustration on the part of many graduates from the system.

(v) Lack of complementarity between formal and non-formal education

Non-formal education programmes and activities are developed in isolation from the main stream of educations development and hence the two systems function as separate entities lacking a common purpose and goal.

2. Criteria for evaluating educational policies

Three questions may be asked in respect of establishing criteria for evaluating educational policies. No claims is being made to say that these questions are exhaustive; they only indicate the magnitude of the problem.

The first question to ask is:-

- should we evaluate in terms of objectives or should we evaluate the objectives themselves?

Certainly we can establish criteria for evaluating an educational policy by direct reference to the objectives which the educational system proposes to attain - be they education, social, political, cultural, economic pedagogical etc. objectives. This method is suitable when evaluating education programmes or projects. It however assumes that one can:

(a) clearly identify the objections of the system in spite of their being implicit or couched in very general terms;

(b) establish indicators/indices to assess the extent to which the objectives laid down were attained or are in the process of attainment.

This approach, however has limitations and therefore evaluation of the value of e educational policy must extend to the objectives themselves. This is because the factors which affect national development are inter-dependent and passing judgement on the forms and method of economic and social development (of which education is part) must be assessed in the light of objectives set and the policies which govern them. It is therefore important to evaluate educational policies by evaluating the objectives themselves.

A second question to ask is whether there is a logical pattern in the development of an educational system? Certainly a lot can be learned from the way other education systems have developed over the years. However because there are differences in the level and pace of development, each country must develop with reference to national demands, requirements, and the resources available for education and national development one can make development decisions based on historical trends of educations and national development patterns over the last few years. In this regard, one should be able to establish the relationship of coherency between the development of education and the economic, social, cultural and political development of the country as a whole.

Following from this last remark, a final question may now be asked:

- Is it possible to set criteria for the coherence of the educational policy and the economic and social development as a whole for a given country?

In answering this question, it is possible to establish such criteria which would embrace:

(i) the means devoted to education but assessed with reference to national resources as a whole and the fulfilment of national and educational goals; and

(ii) the results obtained in the cultural, social, human, political economic and educational fields.

In this regard, and for the purpose of this paper the following criteria should be examined:

(i) Economic coherency criteria allocation of resources and costs could be examined as follows:

- proportion of national resources devoted to education as a present of GDP, total public expenditure etc.

- share of educational expenditure compared to expenditure in other ministries and the social sector;

- proportion of expenditure on education, considered as investment in human capital compared to investments in production facilities;

- break-down of educational expenditure by level of education;

- relative share of expenditure on formal, non-formal and technical/vocational education;

- magnitude of unit costs per student/pupil at the various levels of the education system and factors which govern the magnitude of the costs.

(ii) Coherency between the outputs of the educational system and manpower requirements of the country.

This refers to the magnitude of input and output flows of the system and the various levels and types of education:

- the criteria concerning the integration into the economy of those qualified by the system as educated;

- various criteria concerning the quantitative and qualitative short comings of vocational/technical training compared to the requirements of national economy.

(iii) Pedagogical criteria

- rating of internal efficiency (see the write-up on internal efficiency in Section VI of this paper);

- ratings of the quality and professionalism of the teaching body.

(iv) Social coherency criteria

This involves examining:

- regional disparities in the provision of education;
- social discrepancies and sex discrimination;
- influence of education on social mobility;
- influence of education on the growth of towns, cities and society and population.

(v) Cultural criteria

This involves examining:

- the part played by education in cultural development;

- the adaptation of education to national culture; and

- the proportion of foreigners working in a country and the influence of foreign cultures on the culture and life of the people.

(vi) Political criteria

This involves examining:

- the educational system as a factor of national cohesion, and the yeast in the loaf of political unity;

- the part played by education in citizenship;

- the educational system as a factor in participation by citizens in economic, civic and political activities.

(vii) Human criteria

This involves assessing the role played by education in the contribution and fulfilment of an individuals happiness, health, welfare and the satisfaction of basic human needs.

All these criteria ought to be taken into account in the development of a country's education system and within the context of national development policies.

(V) Systematic approach to goal analysis and evaluation of educational programmes.

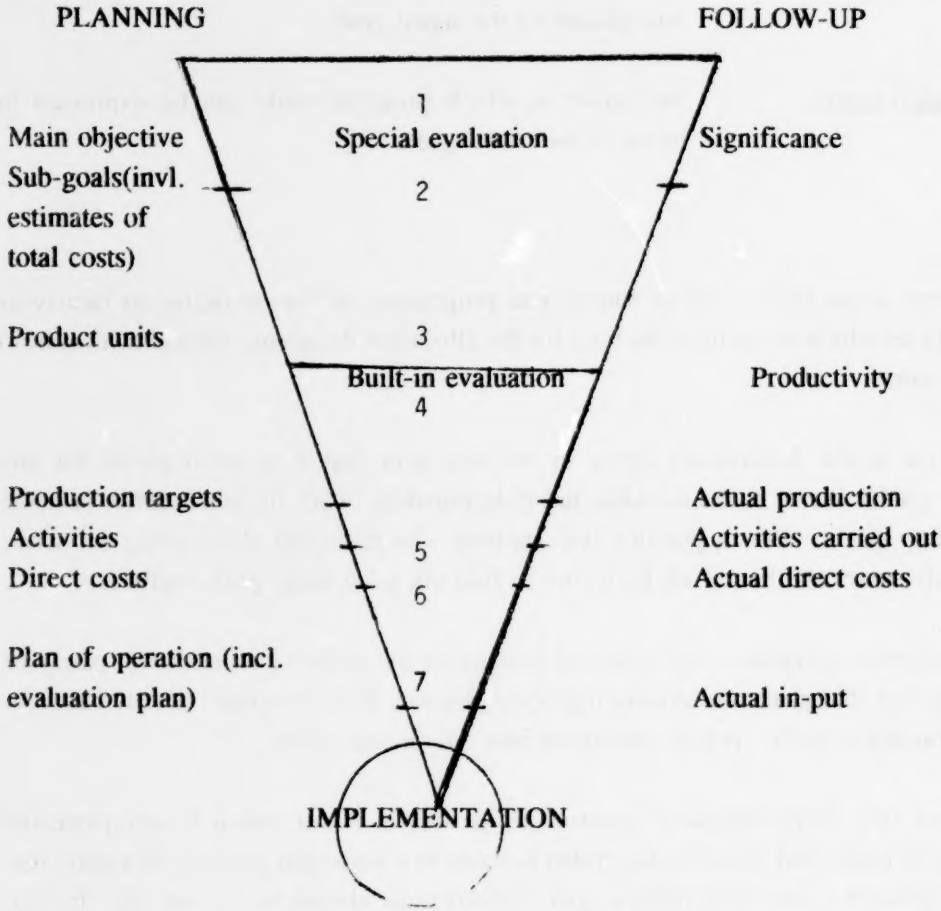
Under this title, we examine a systematic approach to evaluation and analysis of public goals as seen from the evaluation point of view under six major phases:

A. Systematic approach to evaluation

Evaluation is continuous process from the moment when a project idea is born to the day the results and affects of a certain project cannot bae related to the objectives of the project. Project evaluation must thus be a continuous process integrated int he planning, implementation and follow-up phases of the project. This systematic approach to evaluation can be illustrated in the figure on the following page.

In this figure, the left wing of the 'V' illustrates the planning phase starting with the analysis of main objectives which are then concretized into sub-goals, production targets, activities, cost estimates and implementation plans. The wheel at the bottom of the 'V' feeds planned in-put into the implementation process. The right wing of the 'V' shows the follow-up of actual results and affects. The comparisons between planned and actual results (level 7-3) is then defined as built-in evaluation and the comparisons between planned and actual effects (level 3-1) defined as special evaluation.

Figure 3: Systematic approach to evaluation



B. Analysis of public goals

The importance of well-defined goals can be described in terms of:

- Allocative power: the extent to which criteria for establishing priorities can be derived from the stated goals,

- Management power: the extent to which programme activities can be related to and guided by the stated goals.

- Evaluation power: the extent to which progress made can be expressed in terms of the stated goals.

The first step in an analysis of an educational programme is thus to define as clearly as possible the policies which are to form the base for the allocation decisions, management control and evaluation work.

Most analysis would theoretically agree to the statement that it is pre-requisite for any analysis in the public sector to know what the policy-makers want to achieve-that is being familiar with their goals. But in practice few analysis - in particular those using economic research methods - start off their work by trying to find out what these goals really are.

This theoretical acceptance but practical neglect of the political policies can partly be explained by the fact that goals are already implicity given in most economic models partly by difficulties to transform public policy statements into operational goals.

The above described evaluative approach by definition is not linked to any particular economic or social policy but based on the stated policies in a particular country fora particular sector or programme at a particular time, a goal analysis must always be carried out. In fact, it constitutes the very heart of the system.

The analysis of public goals - as seen from the evaluators point of view - can be divided into the following six major phases:

(a) Describe the problem area
(b) Identify policy outputs
(c) Specify the goal elements
(d) Structure the goal elements
(e) Analyse the linkage goals on different levels (means and ends test)
(f) Analyse conflicts between goals on the same level.

These six steps of the goal analysis, on which the following discussion will be based, can be illustrated as below:

(a) Description of the problem area

Policies are not formulated in a vacuum. They are - or should at least be based on assessment of the present situation. The achievements to be aimed at can be indicated and transformed via, e.g. a political process into policy outputs; annual and long-term plane. An evaluator of, e.g. educational programmes should not directly be involved in policy-making. His role is to utilize the policies stated in the analytical work in order to help the policy-makers to acquire a better understanding of alternatives as judged against their own policy statement. The evaluator can, however, only play this role if he has same insights as regards the process of policy-making as such and knowledge about the structure of the educational sector and content of the educational plans.

(b) Identification of policy output

Familiarity with the policy-making system described above is necessary when the various policy outputs are to be identified. These outputs may be expressed in written documents or only verbally stated. Some may be explicit and clear policies, others rather vague. In many cases it will be next to impossible to find any policy guidelines at all except the fact that a decision is to be or already has been taken. But one thing is for sure: goals always exist as long as the purpose of a programme or a project is to achieve something. It is this 'something' that the evaluator must identify. As the structure of policy making varies between countries it is impossible to give any general indications as to look for policy outputs in governmental bills, developing plans, committee background papers, plane of operations, legal documents, various protocols, budget presentations, etc., etc. The only advice to be given is that the evaluator take the time needed to find out what exists and what does not. One may argue that it should be the policy-makers's job to communicate their policies in such a form that the evaluator never had to search for the information needed. But as this study tries to face reality as it usually exists such a recommendation is seldom a solution to the problem to be solved.

Instead we will consider the quality and relevance of the policy outputs in order to facilitate the next steps of the goal analysis - the defining of the goal elements.

The quality of the policy outputs only refers to how well they are defined which, of course, has nothing to do with the quality of the content.

The relevance of the policies must be determined with reference to the structure of the policy-making institutions. The reason of course being that in any field of public activities there exist various opinions of what ought to be the policies to be followed. If funds are to be allocated within, e.g. the educational sector, various interested groups such as the teachers, pupils, parents, officials at the Ministry of Educational, political parties, leaders at regional organizations etc., are interested to influence the decisions to be taken. The evaluator is of course not the one to judge what are to be considered good and bad policies - his task is to consider those policies that are formulated in accordance with the accepted policy-making process of that particular country for this particular type of programme. Neither is he to introduce his own political views into the analysis. This may seem self-evident but how many times have not analysts introduced theoretical model without recognizing the implicit policies then applied. It may sound more scientific to refer to partial optimality than to a vague governmental bill when analyzing various expenditure patterns for education. In terms of relevance for the evaluation the simple truth is, however, that a policy formulated by the government in the country concerned(e.g. that the regional distribution of new schools should be considered) is far more relevant than the policy ideas of a prominent economist from Italy at the beginning of this country (which includes the idea that re-distributional policies are not being considered).

(c) Specification of goal elements

The relevant policy information identified is now to be transformed into what can be called goal elements, that is to say formulated in operational terms from the programme evaluator's point of view. In the ideal case the policy-makers may present their guidelines not in lengthy and vague statements but as precise goals. Usually, however, it is not only task of the evaluator to identify policy outputs but he must also specify the operational elements in these policy declarations.

A set of goals are usually considered operational if all the individual goals are measurable in relevant units and if the individual goals 'form a logical and unambiguous whole in such a way that they can be achieved simultaneously'1/. The strong emphasis on quantifiable units has often stimulated analysis to consider only those goals that can be expressed in operational

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1/ Eero Pitkanen, Sweden Journal of Economics 1970 p.207

terms and neglect goals that cannot be expressed numerically. To avoid this, one may either stress that both operational and non-operational goals should be included or widen the concept of operationality to include all goals that can be formulated in such a way that the goal fulfilment can be described either in quantitative or qualitative terms.

(i) The quantitative dimension

The basic meaning of operational being measurable it is obvious that the quantitative expressions of the goals are of central importance. The extent to which it is possible to quantity different types of goals and thus benefits are to be discussed in some detail below.

(ii) The qualitative dimension

This should be considered both as regards the qualitative aspects of the quantifiable units (e.g. the quantitative units student examined' can be qualitatively described in terms of minimum knowledge required to pass the exam) and for such aspects of the goal that cannot be qualified (e.g. described of what is meant by the goal' in a more democratic society')

What is important is that the language used when describing the qualitative dimensions is as clear as possible. Only one interpretation should be possible.

(iii) Distribution dimension

The distributive dimension covers both distribution between various target groups. We will limit the presentation of this dimension to the distribution over time and between groups.

The distribution over time can be described by a starting point (base-line), various check-points during implementation and a specified time when the final goals are to be achieved.

The base-lines serve the dual purpose of informing the decision-maker about the present situation and thus improve the base for decisions as well as they enable the manager to follow the goal variables over time as from the time before the programme was implemented.

The distribution between various groups (e.e. classified in terms of income, age, sex, or geographical loc ation) is equally important but in spite of this often neglected in most public goal formulations. Just as goals always exist - at least in an ex-post sense - so do target groups.

Often distributional goals are usually either very vaguely formulated (equality is important) or belong to the implicit goals that fall into contradictory pieces if expressed explicitly. Another reason for the present situation is not know and thus the light of explicity will only reveal a lack of knowledge. Finally an often heard argument for not focusing on the distribution between groups when appraising public programmes is that taxes and other "distributional" policies take care of these aspects.

(iv) The Executional dimension

The concept "operational goal" implies, as described above that the goal can be used as an allocative, management and evaluative tool. The executional dimension of the goal describes the extent to which the goal in reality will be related to the allocative decisions to be carried out.

Many political goals are expressions of compromises and may be the most practical way to avoid political conflicts. The goals then formulated may have no "steering power" as regards the development on lower levels.

In these cases the technique of "revealed preferences" can be useful in checking to what extent the decisions actually taken are in line with the policy statements made, that is to make a crude but clear distinction between what can be considered real and imaginary goals respectively.

(d) Structuring the goal elements

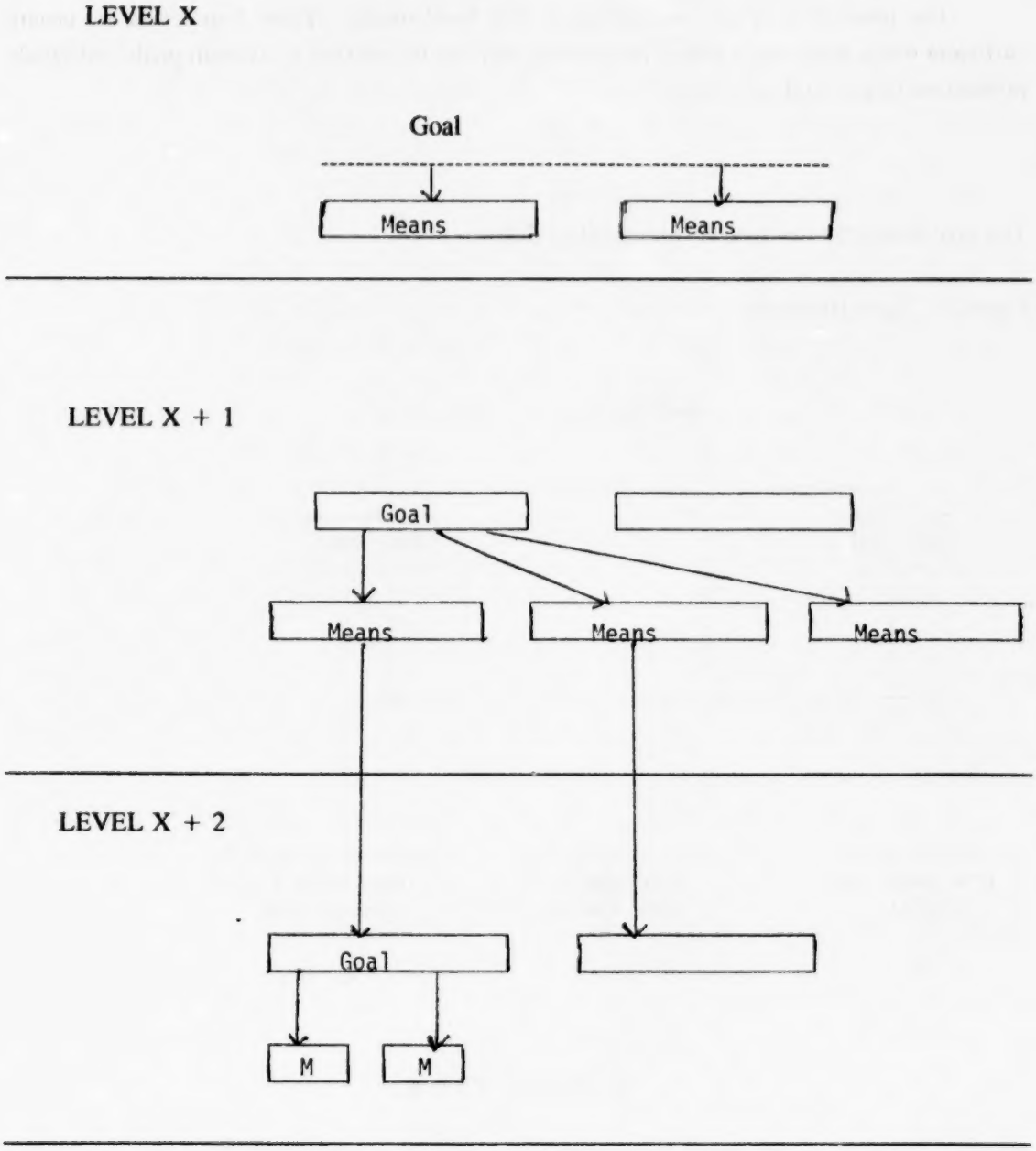
The goal hierarchy:

We have now reached the stage in the goal analysis where the relevant policies have been transformed into goal elements which are as operational as possible. The next step is to relate these goal elements to various policy levels, that is to say identify how ends and means are related to each other. This can be done by constructing a goal hierarchy.

A goal hierarchy - or a means and ends chain as it is also called - can have any number of levels and is characterized by the fact that ends on one level become means on another.

(See the Figure 4 on the next page)

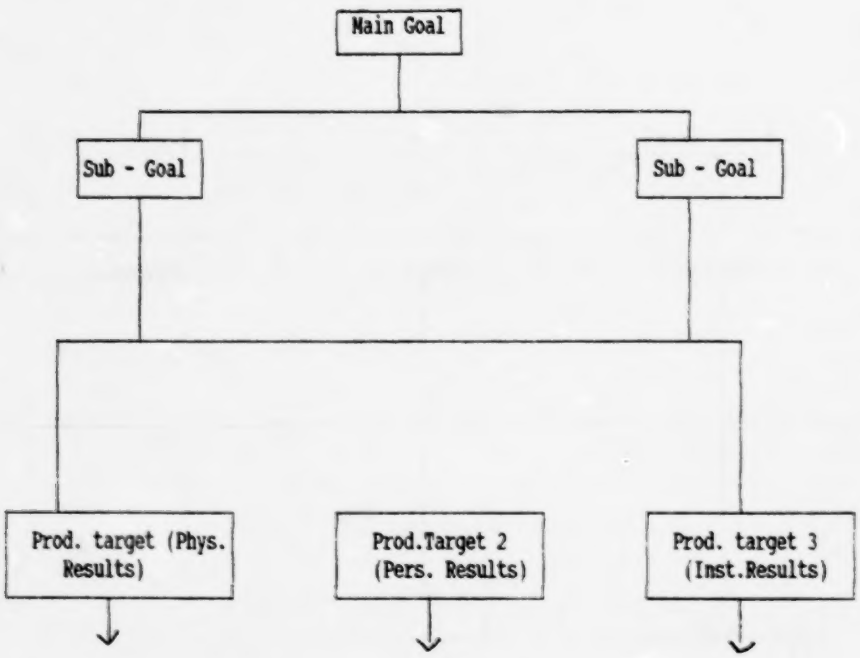
Figure 4: Goal elements and means



For practical purposes we will use a four level model. These four levels are usually sufficient when analyzing a public programme and can be referred to as main goals, sub-goals, production targets and activities.

The goal hierarchy can then be presented as follows:

Figure 5: Goal Hierarchy



In constructing such a goal hierarchy both the "top-down" and "bottom-up" approach must be used depending on the extent to which the alternatives are a priori given. Again it is worth under-lining the fact that the evaluator has to try to structure various goal elements into a goal hierarchy should not reduce - but stimulate - the policy - makers to do the same before the policy statements are formulated. This would be a most effective way of directly improving the consistency and clarity of almost all policy statements and stop the present presentation of isolated policy elements on various levels.

(e) Analysis of linkages between goals on different levels

The logic of the goal hierarchy, which implies that the various goal elements are " sorted in" on the appropriate levels, must be integrated with an analysis as regards the linkages between the different levels. This is usually called an ends and means or a means and ends test depending on whether the 'top - down" or "bottom - up" approach is used.

One way to understand and describe these linkages is to look upon the various goal levels as separate subsystems and then try to see how these systems are linked to each other. Assume that we are to carry out an expost means and ends test. The starting point would be input system specifying what inputs (in terms of e.g. money, manpower, goods and services) actually had been provided. The linkage between the inputs system and the project system is revealed though questions such as: was the money used in accordance to the plane? Could the manpower resources be utilized? To what extent were the goods and services provided successfully absorbed by the project system? What inputs were missing (lack of linkages) ? The project system then transforms these inputs via various activities to outputs. The linkage between activities and certain production results is of course of extreme importance and is usually a problem to be studied by a subject matter specialist.

To consider only production and productivity has in many cases simply implied that the wrong outputs have been produced more effectively (improved teacher training for the wrong types of teachers, increased production of products without a market, etc.). In other instances isolated productivity analysis have stimulated the decision-makers to try to maximate a certain type of production without relating it to other related project systems and higher ends. A positive effect of stressing the relationships between means and ends is also that the subject matter specialists have to relate their knowledge and recommendations to a wider and more dynamic context instead of limiting their views, e.g. the project system. If this type of

communication is improved the risk of the " white elephant" projects is reduced and every subject matter specialist has to come out of his professional jargon in order to relate his job to the others' in order to achieve a common end.

(f) Analysis of conflicts between goals on the same level

"The government of any society may be viewed as composed of many competing individuals with conflicting goals"1/. The last part of the goal analysis will focus on the understanding and formulation of these conflicting goals. The whole process of resource allocation can of course be considered in terms of various goal conflicts as more resources to one programme results in less for another.

The more limited scope of this analysis is to discuss some possibilities and constraints in order to determine relevant trade - off between e.g. stated production targets or sub - goals in order to create a base for the further analysis of the resource allocation problem. This is to be considered an alternative to the present trend to neglect goal conflicts at the policy level and only consider one goal at a time.

In terms of political alogans the goals for education, health and improved communications may then be formulated separately in very general terms. Expressions such as integrated, unified, or balanced approaches may however give the public an impression of a consistent whole. For the programme analysis' point of view such goals resemble more of a wishing list than a base for any allocation decisions.

What is for example the meaning of "balanced regional development in the field of educational facilities". Is it to be interpreted as if the differences between rich and poor regions in a country should be reduced (balance - equality) or remain unchanged on a higher level balanced - present distributional pattern) ?

A simple systems approach can also, when analyzing relationships between goals on the same level, be preferred to a static expression of a single goal as it helps the policy-maker and evaluator too understand the dynamics of the various goals.

1/ J. Alessi, "Implications of Property Rights for Government Investment choices". The American Economic Review, March 190960.

A major task for the evaluator is to identify inconsistencies within the goal structure and by making them explicity hopefully improve the technical quality of the goal either by stimulating policy-makers to reveal their preferences or by structuring the available goal information in a systematic way.

Not until these steps in the goal analysis are carried out can the identifications, enumeration and evaluation of relevant benefit expressions of a particular educational programme be focused and an ex - post evaluation - from society's point of view - be useful for policy - makers and managers.

C. Benefit measure applied when evaluating educational programmes

The identification of the benefits for a certain project is the same as the description of the content of its operationally defined objectives and goals. In spite of this, it may be interesting to indicate some benefit measures as they actually have been used in various analyses in order to exemplify the possibilities and limitations to express progress made in quantitative and qualitative terms. These measures are, of course, only to be regarded as examples of potential benefits.

(1) the principal measure of productivity is the increased earnings due to higher education as isolated as for as possible from income effects determined by native ability, family background, social class origin, work experiences, etc.

Even if we could isolate these factors and all the relevant statistics were available it can be questioned whether - from society's point of view income leaves and productivity levels were strongly corrected. From the individual's point of view the earning as such is of course the criterion of better opportunities and possible rise in level of living regardless of the productivity effect of the job performed.

When calculating the productivity/income effects of education the actual rate of employment must be estimated (based on manpower plans) and underemployment must be included in the analysis.

(2) Consumption benefits from education (the pleasure during and after education) is hard to measure and therefore often excluded.

(3) Social educational benefits include:- greater flexibility in a changing society due to education (greater security);

Higher status and, perhaps, more "wanted" type of jobs;

Lower birth rates are often associated with education as well as improved health (due to better hygiene).

(4) Indirect benefits

Other persons earn more due to the education of some, e.g. employers subordinates, families (mothers can go out to work when the children are in school);

Less social cost for the public in the field of police protection, social welfare, etc. (mainly relevant in urban areas in industrialized societies).

(5) Institution building effects

Development of an institutional structure adopting and forwarding attitudinal changes with positive effects on the development process;

The maturity and quality of the teaching institutions can be measured (e.g. by assessing the quality of the inputs).

(6) Political benefits

The importance of a literate electorate;
Forging a national culture and in many cases a common language;
Modernized outlook both as regards those educated and their relative (e.g. Parents and Friends.)

(7) Distributional benefits

Education can bring about equality in opportunities and the distributional benefits of providing education to those under the poverty line are an extremely important

policy measure to decrease the gap between poor and rich. It should, however, be recognized that the place of residence after completed school rather than the location of the school is most important. A theoretical elementary education in a rural setting may just increase the unwanted urbanization and thus unemployment in the cities and be of no or negative effect for the communities where the school was located.

VI. Evaluating the internal and external efficiency of educational system

A. Internal efficiency

Earlier analysis has been made on the decisive factors for the internal effectiveness of an education system. This section deals with evaluating the efficiency of operations known as the internal efficiency. In this analysis an examination is made of the main aspects of internal operations including the context and relevance of education programmes, the teaching methods, the quality of the staff; the adequacy and utilization of space; the appropriateness, and used of equipment, the effectiveness of management, and the interrelationship with society and the world of work.

In evaluating the efficiency of operations certain key factors have shown to have a primary influence on the overall efficiency of an education system. These will be examined from the point of view of quality, quantity and national/central education system only a summary of such analysis will be made here rather than a detailed description.

(1) The qualitative evaluation

This refers to assessment of operations in terms of quality by evaluating a number of key factors viz:

(a) Level, content, quality and relevance of the education programmes.

- the format and content of the curricula and syllabuses;
- implementation of the course: The teaching process, methods and materials used and education activities;
- the examination scheme, content and conduct of examinations.

(b) Students

Evaluation will look at:

- selection methods, entry qualifications to the system especially at second and third levels;
- sponsorship of education or methods of funding students educations;
- guidance, counselling, placement and follow up;
- student - staff and community relationship.

(c) Staff and staffing development

Evaluating in respect of:

- staffing policy, salaries and conditions of service;
- selection recruitment and qualification of staff;
- size and quality of staff and staff turnover;
- size, quality and salaries of support staff;
- staff development plans, training (pre-service and in service).

(d) Physical Resources

- range, area, and lay out of accommodation for both students and staff;
- facilities, services and maintenance;
- range, relevance and adequacy of equipment in the system;
- use of equipment, maintenance and repairs;
- replacement and updating of equipment;
- use, replacement and storage of consumable materials;

(e) Organization and Management

- Education/institutional development plans and objectives;
- organizational structure and responsibilities;
- management information system availability and use;
- management styles and effectiveness.

(f) Interrelations with the community

- relevance of education to society;
- formal levels with productive life and services to society;
- community like environment.

(2) The Quantitative Evaluation

Quantitive indicators of efficiency of operations include student flow rates and performance; staff load, provision and utilization of facilities and resources and breakdown of education costs. These are analyzed as follows:

(a) Student flow rates

The most useful measures of student flow rates are:

- admission rates (the proportion of applicants admitted to the course; at primary level, it refers to the proportion of school age pupils admitted to grade one).
- drop-out rates i.e. those who fail to complete the course for one reason or another;
- repetition rates - those who repeat a class or course instead of proceeding to the next stage/grade or class as a proportion of the previous year's enrolment;
- pass rate (the number of students completing the course/grade successfully as a proportion of the students enroled in year of examinations to produce passes.

(b) Student performance (efficiency indexes

An overall indicator of internal efficiency in terms of student performance is found by dividing the member of graduates outputs by the number of students entering at the beginning of the course to yield a percentage. If the amount of repletion is significant, it is more useful to employ a measure which indicated how much additional time over the planned time is required to produce the needed output.

(c) Staffing

Indicators include:

- the student - teacher ratio;
- the average class size;
- the average teaching load of a teacher often expressed as the number of contact hours per week.

(d) Facility schedules and utilization of space

Evaluation indicators include:

- average area of work space, (area of classroom or laboratory divided by the normal working capacity;

- average area of support spaces (area of library, recreational facilities, hostels, dining halls, etc.) and the like divided by the number of students using each kind of area;

- space utilization (i.e. the actual student occupancy of total teaching space as a proportion of the total capacity of the teaching space).

(e) Costs

The most important cost measure is the unit cost per student or the cost per graduate. Other analysis of the cost do provide valuable information for comparison or decision making e.g. - staff salaries as a proportion of total cost.

- cost per student per year for consumable materials;
- maintenance cost as a proportion of capital costs.

(3) National Education System

This refers to the main methods of evaluating the major aspects of national education system so as to gain and understanding of the context within which education operates as an instrument of national development.

The key factors in evaluating the national education system are:

- Policies, planning and development;
- local, regional and central control as regards:

  : education programmes and activities
  : staffing and recruitment
  : physical resources
  : financial and sources of funding education; and
  : managements organization.

B. External Efficiency

So far the discussion has been confirmed to the internal operations of an education system. Attention will now focus on evaluating external efficiency of education systems.

It is conceivable for an education system to be extremely efficient internally i.e. making use of staff and physical resources and achieving a high output - input ratio (of graduates to entrants) and yet turn out graduates who are not wanted in the work world. External efficiency therefore refers to "how well the education system fulfils its stated purposes, aims, goals and objectives". It involves an assessment of costs of education in relation to benefits education outcomes; labour market and productivity indicators.

As regards cost, our interest is on the social opportunity cost of the education system i.e what will the nation or society have to give up to build and operate the system. Even from the point of view of an individual, we are interested in opportunity cost what the individual has to give up to participate in education. The calculation of such social opportunity cost is not easy as it is often blurred by taxes on, say equipment; education subsidies, and foreign exchange problems thereby not giving a true market price for a commodity or a good.

As regards outcomes of education, these are often assessed at different times and using different measuring instruments. Educational outcomes can be measured at the end of a course or programme; and in the case of education tests and examination are often used. However, the application of skills, knowledge and attitudes and their impact on development can be evaluated only when one engages in productive and income rendering activities or in national development. Indeed the workplace, be it self or salaried workplace is the most promising source of information for assessing skills and development outcomes, often therefore, wages/earnings can be used to measure benefit or productivity of education. Even this measure could be misleading.

It is also possible to compare costs with outcomes i.e. the social benefits accruing to a nation or society in relation to the amount of money spent on educating such individuals. This is now becoming a serious issue for debate especially in the light of current proposals for structural adjustments in education. It is not the purpose of this paper to open up such a debate as to whether it is more beneficial to society to invest more in primary or higher education.

It should be emphasized, however that formal cos-outcome analyses are often supplemented by analyzing indicators of employability and productivity and the labour market demands for the products of the educational system. Graduates/outputs of one programme or from one level of the system may find it very easy to be absorbed in the labour market or world of work; or may find it very easy to become self-employed. Others may be job - hunting for months if not years and even when such a chance arises for finding a job, there may be need for training so as to make themselves productive.

Often, the criticism levelled against education for failing to equip students with the right knowledge, skills and attitudes is a worthwhile indicator of the external efficiency of education. The industrial sector may not be interested in employing school learners because they lack relevant knowledge and skills i.e. that the education system is failing to provide the necessary experiences.

In view of the foregoing, we may now summarize the indicators of internal and external efficiency as follows:

C. Summary Assessment of Internal and External Efficiency

(a) Internal Efficiency

(1) Qualitative Indicators

(i) Content and quality of courses

- Format and content of curricula and syllabuses;
- Quality of curricula and syllabuses;
- Review and revision of curricula and syllabuses;
- Teaching methods;
- Examinations and assessment.

(ii) Pupils/students

- Entry and selection;
- Counselling and career guidance;
- Staff/student relationships.

(iii) Staffing and staff development

- Staffing policies;
- Selection and qualifications;
- Staff development and training;
- Support staff

(iv) Physical Resources

- Teaching facilities;
- Support facilities;
- Utilization of space;
- Provision of equipment;
- Equipment utilization;
- Consumable materials

(v) Organization and Management

- Objectives and plans;
- Organizational structure;
- Information system;
- Management style and effectiveness

(vi) Interrelations with Industry & Society

- Education and employment;
- Education and productive work;
- Formal links and services with industry and society;
- Industrial links of students and staff;
- Work and industrial environment.

(2) Quantitative indicators

- Average time required to produce a graduate divided by planned time;
- Output - input ratio;
- Cost per student per year;
- Cost per graduate;
- Cost per student in training institutions divided by cost per student in general high school.

(b) External Efficiency (outcomes and costs)

(i) Employers' opinions on employability of outputs

- Outputs of one programme preferred to other applicants;
- Same as other applicants;
- Outputs of one programme less qualified than other applicants.

(ii) Teachers opinions of outputs

- Well prepared for work/job;
- Only adequately prepare for a job, self or salaried job;
- Not well prepared for any job;
- Will take up any job available at earliest opportunity.

(iii) Outputs' opinions on their ability to secure employment

- With any education it is easy to get a job;
- With my educational attainment it is not easy to get a job;
- With my education it is very difficult to get a job;
- Length of time taken to secure a job;
- No one interested in employing people of our educational attainment etc.

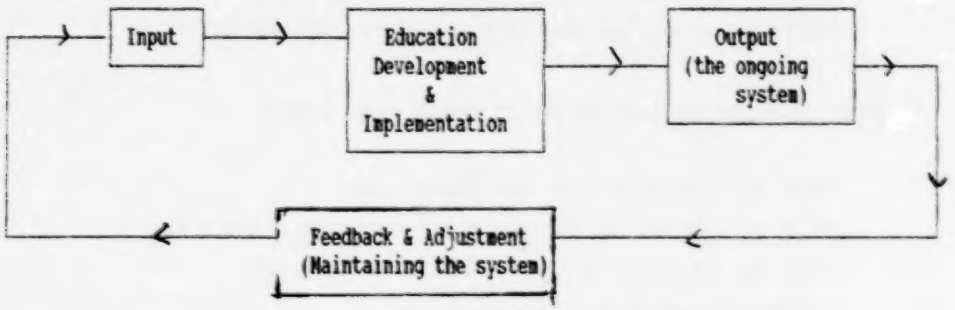
(VII) Assessing the expected outcomes of education

A separate paper on this title appears as Part Two of this presentation. Part Two examines what every learner should know and how such expected outcomes of education should be assessed. Reference should therefore be made to Part Two for a discussion of this matter.

(VIII) Monitoring the Education System

In the introduction to this paper, a description of what monitoring is, was given. Here monitoring of education system comprises of the feedback and adjustment phase of the systems approach to education.

Figure 6: Feedback and adjustment



Monitoring is essential so as too provide education decision makers with information to ensure that planned results are in fact being achieved.

Essentially the monitoring function in education or programme maintenance involves the following stages:

(a) Review of education as developed and the results of evaluation of the education system after the completion of the first, second or third levels, or following the implementation of a programme;

(b) Finalizing the stages for monitoring the system, setting up the tasks of monitoring and listing personnel for monitoring;

(c) Engaging in the actual monitoring involving six stages viz.

(i) Noting of the various effects on students and teachers behaviours of the systems elements (i.e. subject content, learning experiences teaching methods, instructional facilities, teaching materials and equipment, administrative/organizational structures etc).

(ii) Noting of those course elements which can be maintained, continued or discontinued;

(iii) Indicating those course elements which require revision or elimination;

(iv) Observing of the various support personnel and services in relation to the on-going school programmes;

(v) Maintaining of information flow during the monitoring process;

(vi) Assisting staff, both new and old in meeting the challenges of the system in the light of the changing characteristics of the system and curricula needs.

Monitoring therefore is the means by which educators check for order and disorder within the system. It involves intervening where appropriate, making adjustment where necessary to influence the nature and degree of student learning and initiating actions to ensure the implementation of the required changes.

A. Basic Monitoring Assumptions

(1) Monitoring of an education system is effective e provided there is a follow-through i.e. that there is a continuous watching of the system its programmes and activities to ensure that the aims, goals and objectives of the system/programme are not lost sight of.

(2) Monitoring relates to feedback control, the generation of information and using it to make correction judged necessary at a particular time;

(3) Educators involved in monitoring should have a detailed understanding of the total education system, the education process and their roles in monitoring the system;

(4) A final assumption basic to monitoring is that various programme elements of a system can abe identified and the means can be generated to assess their effectiveness.

B. Elements to Monitor

The elements of an education system which should be monitored are:-

(a) Aims goals, objectives and policies of the education system. Are policies, objectives etc. clearly stated and evaluated? How effective are they in the fulfilment of the education function;

(b) Subject content: Is there adequate coverage of the subject content in each programme; balance and depth of content; ;and a reflection of the needs of the individual and society;

(c) Learning experiences and instructional methods - i.e. the suitability of learning experiences and instructional methods and whether they are in time with programme goals and objectives;

(d) School environment as regards instructional and recreational facilities, equipment and materials, service facilities, health services books, textbooks etc.;

(e) Educational staff - both teachers and support staff their training conditions of service, their professionalism etc.;

(f) School organization educational space is monitored to ensure optional classroom utilization; third maintenance of educational facilities, equipment, classroom control and descriptive in schools; supply and distribution of school naturals, textbooks, equipment etc.

(g) Performance/achievement - it is important to monitor progress and achievement of learners. Hence information about examination and student achievement should be fedback to the schools so that necessary adjustment can be made.

(h) School's community to continue to monitor how the school and the community continue to view the activities of the school, its programmes, and the impact of graduates for the community.

(i) School Budgets and Funds in relation to the output - input ratio and the social benefits of the education system to society and the individual; the unit cost; and ;the sources of funding.

C. Monitoring Methods

The key words of monitoring are self-correcting and fine tuning . When monitoring facilitates this, it means that the system or programme can be maintained , though not in its original form. To maintain or monitor a system an individual/individuals should have the responsibility for the various monitoring tasks and to ensure that findings are evaluated against the pro grammes' total conceptualization and its management plan. Thus one could use the following methods to monitor various elements of an education system as shown in Figure 7.

Figure 7: Elements of Education System and their Monitoring Methods

System's Element	Monitoring Method
1.0 Content/subjects available for students	- Checking to see that teachers guides are available
	- Getting reports from teachers as to topics intended to be covered;
	- Using case reports to obtain data on content available;
1.1	- Analysis of teachers lesson plans, schemes and records of work;
	- Surveys, tests, examination reports, questionnaires etc,
	- Casual reports/observations
	- Analysis of students work/assignments; examination of students notebooks.
2.0 Curriculum Experiences	- Classroom observation, formal and informal classroom observation schedules;
	- Student interviews, discussions with teachers;
	- Parents, community and employment survey's

	System's Element	Monitoring Method
2.1	Observed students levels of learning	- Anecdatal records, case studies, tests (standardized, teacher made, non-referenial, criterion referenced etc.) - Needs analyses
2.2	Student achievement/ performance	- Evaluation and examination reports - Analysis of examination reports; - Discussions with teachers, parents, employers and students themselves on performances/achievement of students - School reports, teachers test analysis and reviews
3.0	Student attitudes	- Reports from teachers, headmasters - Attitude inventories; class debriefing sessions; - Reports from guidance and counselling officers; - Report from the community and from employers
4.0	School environments	- Reports on purchases and distribution of school supplies and equipment; - Audit reports of school materials and equipment

System's Element	Monitoring Method
	- Discussions with staff, students and lay groups, - Environment observations - Maintenance reports of facilities
5.0 Educational staff functioning	- Informal charts with the staff (academic and non - academic) - Staff sharing meetings, duties and responsibilities; - Attitude inventories, - Classroom observation schedules (formal or informal). - Interpersonal communications - Formal channels of communication
6.0 Follow-up reports on outputs/graduates	- Questionnaires and interviews with school leavers and graduates - Reports from employers and graduates themselves;

	System's Element	Monitoring Method
		- Period reports from those who left school; - Community's reactions to graduates/school leavers.
7.0	Administration and school organization	- Channel of communications flow patterns analysis, observations; - Discussions with teachers, students, educators and parents, - Annual reports and reviews; - Policy seminars, meetings discussion; - Inspectors and supervisors reports, - Administrative reports.
8.0	School's community	- Questionnaires, newspaper articles; dialogue in the parents, school boards students and staff; - Radio/television reports - Parents interviews - Opinionnaires

System's Element	Monitoring Method
	- Formal studies as to parents attitudes to the school and to education received.
9.0 Education Budget and Finance	- Annual and monthly financial reports dealing with allocations and expenditures and unanticipated costs;
	- Reports to Ministry of Finance and Public Accounts committee;
	- Financial reviews and public expenditure reports.

D. Monitoring Principles

For a system to be successful, it is essential that it should be constantly monitored. However such monitoring ought to be done within a context of principles viz:

(a) Persons engaged in monitoring should understand the total education process which has occurred and the place of the maintenance function with the overall education process;

(b) From the administrative function of/among education, there is need to establish a firm co-operation network among all staff concerned with education in teachers, administrators, supervisors, inspectors, education planners, curriculum specialists, examiners, support staff etc;

(c) The communication network needs to identify data to be communicated in terms of behaviours (students' and teachers') and performances (on-going and final);

(d) Established communication network ought to allow for the quick detection of the system's deficiencies and the rapid relay of such information to the appropriate parties concerned;

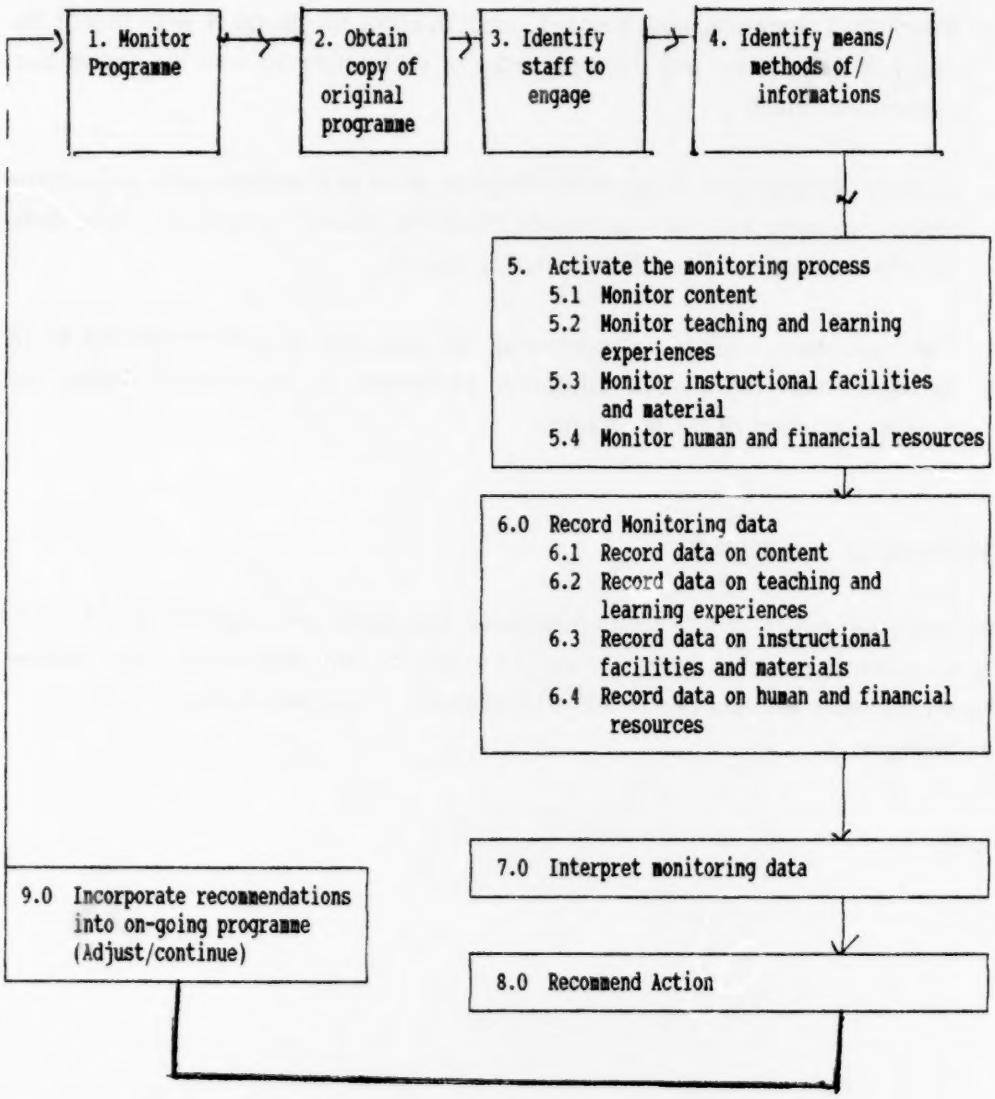
(e) A monitoring process needs to be observed so as to determine what procedures should be continued and what means should be adjusted/regulated. Thus, there is a fine tuning built into the monitoring system.

(f) The procedures utilized in monitoring an education programme should be in harmony with the overall education philosophy as determined during the conceptualization of the programme.

E. Monitoring - A Summary

In the foregoing pages, it has been emphasized that monitoring supplies data for two major decisions - either to maintain the programme or to initiate some adjustment. This analysis may be summarized into a mission profile identifying major events and functions to be performed as in Figure 8.

Figure 8: Mission Pr file of Monitoring


1. Monitor Programme
2. Obtain copy of original programme
3. Identify staff to engage
4. Identify means/ methods of/ informations
5. Activate the monitoring process
5.1 Monitor content
5.2 Monitor teaching and learning experiences
5.3 Monitor instructional facilities and material
5.4 Monitor human and financial resources
6.0 Record Monitoring data
6.1 Record data on content
6.2 Record data on teaching and learning experiences
6.3 Record data on instructional facilities and materials
6.4 Record data on human and financial resources
7.0 Interpret monitoring data
8.0 Recommend Action
9.0 Incorporate recommendations into on-going programme (Adjust/continue)

PART TWO

Assessing Expected outcomes of Education :
What every student should know and how to assess it

I. Introduction

The concept of "education" like that of "freedom" is shrouded with complexities and difficulties. To some it is not easily defined because of what it connotes; and to others, while education is intimately bound to the culture of the community it serves, what education has in common with development after taking these cultural differences into account is "teaching" and "learning". Thus to "educate" means etymologically "to educe or draw out of a person something potential and latent; it means to develop a person morally or mentally so that he is sensitive to individual and social choices and able to act on them; it means to fit him for a calling by systematic instruction; it means to train, to discipline or form abilities. The act or process of achieving one or more of these objectives is as a first approximation, what education is about.1/ Viewed in this way, therefore, education is a process which changes the learner's behaviour in that each programme, course or unit of education aims at bringing about some significant changes in the students.

Basically, students who undergo an educational process should be different at the end of a programme from those who have not had that programme . Admittedly, there are changes that arise out of maturation, changes arising out of growth, and others out of varied experiences from the family, the environment and the school. In this paper, however, our concern is with changes produced by education and in the last analysis determined by school, its curriculum and its instruction. The problem of instruction and its direct outcomes are of concern to many of us because what children learn in school derives from the nature of their experience in the school setting in which the teacher not only imparts but facilitates the students' acquisition of symbolic

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1/ UNESCO, International Standard Classification of Education (Abridged Edition) Paris, July 1975 p.2

skills, knowledge, information and national tradition. Further, our concern is not just the traditional symbolic outcomes,but normative outcomes that emerge through pupils experience in coping with the sequences of situations whose character is defined by the structural properties of school's . These outcomes are formulated not in terms of the explicit goals of the schools peculiar relevance to family life, the community and society, but to the occupational and political worlds.

There is no doubt that schooling forms an important linkage between the family life of children and the public life of adults; it provides experiences conducive to learning the principles of conduct and patterns of behaviour appropriate to adulthood; and that it contributes to the acquisition of knowledge and skills through instruction. But these developmental changes produced by the school constitute only part of the components of the total outcomes of one's life. What is more important is that although education from school can produce significant changes in students, not all learners will change in exactly the same way and to the same level or degree because not all teachers, curricula and schools will be equally effective in changing their students or will do so in the same way or manner scope of this paper that every student will know what is expected of him to know. This paper will thus examine what is educationally possible and desirable and how best these educational objectives can be evaluated.

II. Possible and Desirable Objectives

Given that the primary role of education is to produce changes in learners, it is important that someone has to decide on what changes are possible and what are desirable. This is not an easy matter on deciding what are possible and desirable educational objectives or out comes because such a decision is not the prerogative of one group or party of people. It involves teachers, students themselves, parents, politicians, curriculum planners, textbook and syllabi writers, the community and the employment world. There is no doubt that both the school, the family and the community provide different experiences for children and students and since experiences are an intermediate step which must be present if people are to learn from them, schooling therefore does bring about additions to the psychological repertoire of learning. It does not replace the prior learning obtained in the family or community. The impact of schooling is one of accretion rather than displacement in as far as individuals remain members of some family unity or community during their whole life: they have always to act in a way that sustains the relationship, and provide means for sustenance and employability.

The question that may be asked is: What are the educational objectives that should be pursued and are they possible of attainment? Certainly the two handbooks of the "Taxonomy of Educational Objectives: Cognitive Domain and Affective Domain" do indicate some of the broad classifications of education objectives which are possible of educational attainment by students.1/ However, an educational objective which is possible of attainment by some students is not necessarily possible to all for attainment because of the various factors such as age and level of the learner,the type of previous learning, the level of ability, attitude and interest of the learner, family background, the environment, the teachers, the school setting, facilities available and a whole set of other factors. To a greater extent it is for the teacher to decide which objectives are possible of attainment and in this respect it is up to the teacher to influence the attainment of such objectives based on his teaching style, his ability, experience and personality. It is worth of note that on the whole the teacher does not represent the major factor nor is he the main factor in determining the objectives which are possible of attainment by students.

On the other hand, an objective which is desirable for particular students is in part dependent on their present characteristics and their goals and aspirations for the future. If it were possible to look into, and read, the seed of time so as to decipher a person's future life, there would be no problem in setting desirable educational objectives for every student. We would be in a position to emphatically say that every student should know this and/or that at the end of each programme, course, or unit, every student should demonstrate these or those outcomes. Life would be much easier. But since it is not possible to look into a person's future life, we can only set objectives which are likely to give the maximum flexibility in making a great variety of possible life decisions. If can be argued that what is desirable for the student may coincide with the greatest range of possibilities available to him in the light of his ability, previous achievement, and personality. Educational objectives must therefore be selected with maximum range of possible developments to cater for an individual 'self-fulfilment' for income generating activities and for the pursuance of ideas and service to society.

What is learnt in school is many things to many people and to try to answer this question is but to give a hypothetical answer which considers the outcomes related to the experiences of pupils and tied to their participation in a social setting. Traditionally therefore, our approach to

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1/ Bloom B., Hastings T.J. and Madaus G.: Handbook on Formative and Summative Evaluation of Student Learning McGraw-Hill Book Company, New York (1971) p.10

educational process is concerned with the explicit goals of schools as expressed in curriculum content, that is : the cognitive knowledge and skills involved in reading, arithmetic, and the like; subject matter content, national tradition, how to think, vocational skills, citizenship, self confidence, tolerance, patriotism, co-operation land benevolent attitudes. All these cannot be learnt from school instruction only, because both schools and families instruct children in areas of cognitive development. Some children learn to read and count before coming to school in so far as instruction can be had from mass media, travel, museums, libraries, and personal contacts. In fact, "the greatest teacher of them all is the street.1/

What is learnt in school is that students learn to acknowledge that there are tasks they must do alone and do them in that way: they must act by themselves, accept personal responsibility for their conduct, and be accountable for its consequence. They have to perform tasks actively and master the environment according to certain standards of excellence, and they must acknowledge the rights of others to treat them as members of society on the basis of societal norms. In a school setting students must work independently in so far as assignments given warrant personal attention and no help from others, because in the last analysis it is individual assessment of what a person has learnt in school that counts. Hence the rigid administration of tests and examinations to make sure that an individual's output is produced and not an output with others' help or through cheating. The contribution of school to the outcomes of students is that of adapting the learning potential of the pupil to the various skills and knowledge which a pupil must acquire for a productive adult life and employability. The capacity to hold a job or to earn a living involves not just adequate physical capacity but also appropriate intellectual and psychological skills to cope with the demands of the work-world.

And yet by assigning all pupils/students in a school or a class the same or similar tasks to be performed, teachers and educators are in effect making them confront the same set of demands or at least be subjected to same or similar experiences. Secondly, parity of age creates in students a condition of homogeneity according to their developmental stage. Therefore although students may be given similar tasks the outcomes arising out of those tasks will not be the same. Thirdly through yearly promotion based on stringent examinations (especially in Africa) from one grade to another, students cross the boundaries separating one age category or one ability group from another. In the final analysis, what matters is what the student does and

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1/ Brown Claude - Man-Child in the Promised Land Macmillan, New York (1965) p.43

learns and not what the teacher does. we should never forget that students will always have different experiences even if the external conditions in which they operate appear to be the same.

As Tyler pointed out some years ago, the problem of selecting learning experiences is one of determining the kinds of experiences likely to produce given educational objectives and how to set up situations which will evoke or provide within the students the kinds of learning experiences desired.1/ Tyler went on to argue that objectives must be stated in such a way as to be helpful in selecting learning experiences. Objectives can be stated as things which an instructor/teacher should do; or stated in listing topics, concepts, generalizations or other elements that can be dealt within the courses; they can be stated in the form of generalized patterns of behaviours; or expressed in forms which identify both the kind of behaviour to be developed in the student and the content or area of life in which this behaviour is to operate. 2/ In whatever manner the objectives are stated, whether they are possible or desirable objectives, it is important to select learning experiences that will effectively contribute to the attainment of such objectives. We can therefore select learning experiences that will help students develop skills in thinking; in acquiring information; and in developing social attitudes and interests.

It is the responsibility of teachers/instructors to make various decisions regarding effective experiences conducive to helping students change their behaviours in the desired ways. However, it is the role of evaluation to provide appropriate evidence to help both the teachers and learners attain the desired goals of instruction and the objectives of education. This then brings us to the central issue of assessment and evaluation of expected outcomes of education.

III. Assessment of Expected outcomes of Education

If we accept the fact that one of the purposes of education is to impart specific knowledge, attitudes and skills, then the purpose around which educational systems should be designed is instructional and that knowing is the purpose around which the educational system should grow. Therefore the inter-action between the learner and the environment through which the learner is making progress towards the attainment of specific knowledge, attitudes and skills

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1/ Tyler, Ralph W. - Basic Principles of Curriculum and Instruction, University of Chicago Press, London Second British Impression 1973 p.65

2/ Tyler, Ralph W. op.cit. p/43

is viewed as instruction. An instructional system can be assessed by the degree to which it provides an effective system for the learner, that is, the contribution made to the attainment of desired performance. The development of such an instructional system (i.e. system for learning) is a decision making operation as to what should be learned, how and by whom, when and where, what resources should be involved in preparing and providing for learning; and how learning should be evaluated and improved. It is this last aspect that is our concern in this section of the paper to which we will devote our attention by asking the following basic questions:

(a) What is assessment ?

(b) What do we assess ?

(c) Why do we assess and

(d) How do we assess ?

(a) <u>What is Assessment</u>

Etymologically, the "word 'assess' means 'to sit beside' or 'to assist the judge." It therefore seems appropriate in evaluation studies to limit the term assessment to the process of gathering the data and fashioning them into an interpretable form; judgements can then be made on the basis of this assessment.1/In this way assessment is often used interchangeably with evaluation and measurement, but when used precisely, it has a narrower meaning than evaluation and broader meaning than measurement.

However whether it is used broadly or precisely, assessment is multi-trait and multi-method that is, it focuses on a number of variables judged to be important and utilizes a number of techniques to assay them, such as tests, questionnaires, interviews, ratings, unobtrusive measures etc. It employs a multi-source techniques of collecting data on the same variable using trainers, teachers, instructors and course records, and uses a multi-judge approach of ratings of

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1/ Anderson Scarvia B.; Ball Samuel; Murphy Richard T. and Associates: Encyclopedia of Educational Evaluation, Jossey-Bass Publishers San Francisco (1975) p.27

the same student performance obtained from several assessors and then judgement pooled together.

Whether we are concerned with the outcomes of education or those of a programme or project, assessment proceeds the final decision stage in evaluation, e.g. the decision to continue, modify or terminate an educational programme or course. In fact, assessment is not entirely divorced from decision making because the entire assessment must be planned in the light of possible and plausible alternative decisions. However, in designing a good assessment programme, it is important to identify the range of relevant behaviours and characteristics to be measured; and then secondly to select or design reliable techniques for measuring these behaviours. This brings us to the question of what is to be assessed.

(b) What do we assess

Since evaluation is essentially the process of measuring to what extent educational objectives have been achieved it is necessary to appraise the extent and degree to which these changes have taken place. Such an appraisal should not be done once only but at least twice. Secondly evaluation involves getting evidence about behaviour changes in students so that any valid evidence about behaviours which are considered as educational objectives provides an appropriate method of evaluation. The question however is: whether we should assess or evaluate in terms of objectives, or evaluate the objectives themselves?

It is possible to evaluate the expected outcomes of education by direct reference to the objectives - human, social, pedagogical, cultural, economic, political etc. which the educational system as a whole, or its various sub-systems considered separately, propose to attain. This approach can be used to evaluate educational programmes or courses. It does assume that one can clearly identify the objectives of the educational system but which are usually implicit or couched in very general terms. At the same time it assumes that one can establish indicators or indices be they social or economic, whenever one needs to assess how the objectives laid down have been or are in the process of being attained.

This concept of evaluation, however, appears too limited and therefore an assessment of the value of educational policy must certainly extend to the objectives themselves i.e. we need to assess the extent to which the objectives themselves have been achieved. In this connection therefore we need to assess educational policies, educational programmes, and the internal effectiveness of the educational system of a given country.

(i) Assessment of Educational Policies

Assessment of educational policies involves establishing the coherency between, on the one hand, the objectives of the educational system, the means devoted to them and the results gained from them; and on the other, the main economic and social objectives of a development plan. Looked at this way we can talk of assessment criteria which embrace the means devoted to education and assessed with reference to national resources as a whole; and also the results obtained in the cultural, human, social, economic etc. fields.

In the assessing of educational policies, the four basic concepts of evaluation should never be lost sight of viz:

-Planned significance	Planned fulfilment of main goals Estimated total cost
-Planned productivity	Planned production targets Estimated direct costs
-Real productivity	Real production Real direct costs
-Real significance	Real fulfilment of main/sub-goals Real total costs

The point at issue here is that in taking cognizance of these concepts, assessment should make it possible for us to measure the gap between the planned significance and planned productivity on the one hand, and real productivity and real significance on the other. This also makes it possible to examine the objectives of education and see whether the policy followed is feasible and capable of fulfilment. At the same time we can test the major disquilibria and effectiveness of a policy by reference to its results. In practical terms, if a country's policy is to give primary education to as many children as possible, given that education is neither compulsory nor free, we can assess the effectiveness of such a policy by looking at the actual number of pupils who complete the primary course and compare it with the planned output.

It is necessary, however to assess the coherence of the objectives of education in relation to the social and economic objectives of a given country i.e. in relation to the indicators of economic and social coherence. The point is that to assess our educational policy, account should be taken of the social and economic factors that have bearings on the outcomes of education. For instance, an index of economic coherence is to be found in the adjustment of the output of the educational system to the manpower needs of the country or to the employability of such output. In terms of social coherence, there is need to assess the fulfilment of educational policy in respect of regional distribution of educational opportunities and facilities and the need for regional distribution of educational facilities in relation to population density.

Further, to the question of "what do we assess?" we find that evaluation studies produce comparative results in terms of specified student outcomes rather than assessing the outcome of each school. There is always the tendency of comparing students in boarding schools doing better than those in day schools; and the urban students doing better than rural students without actually taking into account the difference in costs. Certainly in the assessment of educational policies, it is worth asking whether greater benefit can be obtained at less the cost; i.e. whether we can attain our educational objectives at less the cost.

(ii) Assessment of the internal effectiveness of educational system

Another important aspect of what to assess is in respect of the various factors operating in an educational system. First, if assessment is to be undertaken with any hopes of success, the educational objectives should be concrete, pertinent, feasible consistent and quantifiable. But since there are a number of factors influencing internal effectiveness of an education system, it is preferable to concentrate on the educational content rather than on non-educative aspects. Attention should be focused on the decisive factors in internal effectiveness such as: pupils themselves; teachers and other staff; curriculum; the administration; the premises; and parents and other clients. Basically, what happens to the pupils is in essence, what happens to the education system itself i.e. the change of behaviours exhibited by the product of the system is in fact the manifestation of the educational system's external and internal effectiveness, because effectiveness of a system means attaining the objectives previously proclaimed. However, while it is relatively easy to measure the aspects relevant to the internal effectiveness, it is not that easy to measure external effectiveness especially when account is taken of the fact that educational objectives must go beyond the too narrow approach of the familiar equation of "education equals employment." Therefore what we assess must certainly go beyond the expected outcomes and stated educational objectives. This then brings us to the question of why we assess.

(c) The Need for Assessment

Much as we may formulate clear educational objectives, and select and organize learning experiences, the actual teaching involves a number of variables such as the students themselves, environmental conditions, the teacher's personality and his teaching style and the school facilities - all of which have direct influence on the learning outcomes. There is no way in which we can be sure that the expected outcomes will be fulfilled unless we institute within the educational process mechanisms to guide teachers and their teaching towards their desired goals. To make sure that the desired outcomes are attained, there is need to develop evaluation techniques so as to find out how far the learning experience as selected and organized are actually producing the desired results.

We are interested in evaluation as an attempt to describe, appraise and in fact influence the changes which take place rather than to analyze all the processes which bring about that change. In this way the primary role of evaluation in education is to describe and influence change because evaluation is then considered as the systematic collection of evidence to determine whether in fact certain changes have taken place in the learners as well as to determine the extent or degree to which these changes have occurred in individual students. At the same time, evaluation can be viewed as one of the major factors influencing decisions about education or training programmes. To this effect, therefore, we can identify four types of evaluation for four major types of decisions in education viz:

(1) Context Evaluation: In the planning of on-going educational programmes and activities, context evaluation which is diagnostic in nature, helps to discover any discrepancies between programme goals and objectives and the actual impact of educational programmes and then to allow for planning decisions to match the intended and actual outcomes.

(2) Input Evaluation: Since we are concerned with making educational programme goals operational which have been identified and clarified by context evaluation, there is need to assess the optimal utilization of resources in relation to the results. Input evaluation helps us reach such decisions and some of the important issues which demand our concern are: the feasibility of accomplishing the goals and expected outcomes; the availability of strategies for accomplishing such goals and objectives; the potential costs of the various strategies employed to attain the goals and objectives including the advantages and disadvantages of such strategies and probabilities of success based on past experience; the optimal utilization

of staff and other resources (financial or material) including the utilization of external resources be they for teaching or the administration of various assessment or evaluation techniques.

(3) Process Evaluation: Evaluation and assessment should provide a feedback to the managers, administrators and educators of an educational programme. The focus of such evaluation should include the assessment of interpersonal relationships, teaching logistics, and the adequacy of staff performance and facilities. Process evaluation which in this case is synonymous with formative evaluation, is used to make decisions during the course of the programme.

(4) Product Evaluation: In assessing the extent to which the anticipated outcomes have been achieved we are engaged in product evaluation or summative evaluation. The need for this evaluation is to decide whether to continue or to terminate an educational programme based on the results of our findings. If the gap between the anticipated goals or outcomes and the actual outcomes is too greater, we shall be forced to adjust and make necessary changes to the programme; and if it is too small, we are encouraged to pursue the objectives as planned.

Generally, whatever evaluation process we may be engaged in, the primary purpose of assessment is to provide information for decisions about the programme under appraisal and that the evaluation results obtained should be useful not only for improving a programme but for deciding whether to terminate or continue with it. This however presupposes that the process of obtaining evaluation information does meet the appropriate criteria of objectivity, reliability, validity, utility, practicability and ethical responsibility. These criteria are important considering that evaluation is a human judgemental process which is usually applied to the results of programme examinations and through feedback, we can adjust our objectives.

On the other hand, evaluation may be looked at as the final class of the cognitive variables as presented by Bloom in the Taxonomy of Educational objectives. It thus involves a combination of all the five behaviours - of knowledge, comprehension, application, analysis and synthesis. Evaluation then becomes making judgments about ideas, works, solutions, methods, materials etc. on the basis of established criteria and standards. Our problem however, is that once the need for assessment has been recognized, the question is how to set about it.

In setting about assessment we can distinguish different forms and different moments. The different levels of assessment may be at an overall, or at an operational levels. The overall level involves the general diagnosis of the system i.e. it involves an analysis of the educational

policy so that we are able to judge the choice of priorities and the general results obtained. At the operational level assessment is concerned with the fulfilment of the objectives of a programme or project.

Different forms of assessment involve drawing a distinction between the internal and external effectiveness of educational systems. The former, measures performance in the light of the system itself i.e. success in the final examinations is the primary element of internal effectiveness, although other elements such as costs in relation to results and teacher's performance ought to be taken into account too. On the other hand, when we ask "what is the good of the school?" we are assessing the external effectiveness of the system taken from different points of view - economic, social or cultural. The focus of external effectiveness is on the quality of the output of the educational systems in the light of the needs and hopes of the society and of individuals themselves. We need to ask whether the value added to the individual by the system meets the expectations of society and individuals and whether it leads to progress in the direction of socio-economic and cultural development.

Different levels and forms, however, should be associated with different moments at which assessment can be made, although it should be emphasized that assessment should be a continuous process taking due cognizance of the resources needed. Yet in assessing expected outcomes of education, we are not just concerned with testing students for recognition and recall of facts, especially if the programme objectives include more than that, but we are also assessing other outcomes than mere recall of facts. Thus in the final analysis, summative evaluation instruments offer not just operational definition of the matrix of content but also behaviourial outcomes of students. To select an appropriate evaluation instrument, however, entails defining something about what the student should learn and to give detailed operational definition of a sample of the problems, questions, tasks, situations etc. to which the student should be able to respond in an appropriate manner. We therefore turn to the question of how to get the response from the student i.e. how do we assess expected outcomes.

(d) How do we Assess expected outcomes

In education the process of assessment of outcomes starts with the objectives of educational programmes. The main purpose of evaluation is to determine how far the objectives so far set have actually been realized and to this end it is necessary to have assessment procedures that give evidence of the kind of behaviour implied by each of the major educational objectives. But since objectives may be classified according to their cognitive, effective and

psychomotor content, assessment procedures should be devised in such a way as to sample and test the anticipated behaviour at an appropriate level.

If, then, an educational programme seeks to improve the technical writing skills of students, then the assessment criteria should require the student to demonstrate their proficiency through actual writing of either prose or verse. But it is not easy to measure such outcomes because in life, people, society, job requirements and learning environments change and therefore few assessment procedures have lasting and undiminishing value. But whatever assessment procedures we adopt, it is important to ensure in the students an achievement of minimum competency. Tests designed for the purpose should ensure that:

(1) the content and ability which each test task is intended to measure are important and necessary educational outcomes or adequate indicators of job performance;

(2) the set of test tasks is an adequate sample of the expected outcomes of a student who has completed a given programme;

(3) prepared and qualified students to take the test have sufficient knowledge and ability to respond correctly to each test task; and

(4) the minimum acceptable level of performance on each test task is established by the competent assessment authorities. Such authorities may wish to employ modern assessment techniques such as PERT (Programme Evaluation and review Techniques) observation techniques and other methods.

Our concern here however is to examine three generally used models to assess academic attainment through the popularly known tests or examinations as administered by assessment or examining authorities in many countries viz:

(i) The One-shot Model - this simply measures the status of the group under study at a single point in time. For instance the examination taken at the end of the primary course in which the average scores for each school are compared among schools which presented candidates without taking into account differences in aptitude of the students and the circumstances in which the tests or examinations were administered.

(ii) The Longitudinal Model - which measures the growth of the students as they progress through the system from one grade to another. Success at each examination barrier or grade entails that the expected outcomes of the system have been adequately attained by the students to proceed to the next grade or level. In this model the test will be designed according to the purpose for which it is intended i.e. if the system of education is highly selective for a person to move from one grade to another, such selective measures will be applied; and if it is for placement or guidance the tests will be administered accordingly.

The longitudinal model is useful in guiding teachers towards the students growth in the attainment of objectives and provides indicators as to whether the student is capable of continuing with the programme at the next grade or level.

(iii) The Cross-Sectional Model

Since neither the one-shot model nor the longitudinal model are in themselves sufficient measures of expected outcomes, the cross-sectional model can be used as a compromise between them. The model is a test or examination which is given not to the same students but to the current students in the same grade at the same level and the achievement scores used as proxy input to the grade higher than the one being tested. This model does not assess the students individual growth but is used to measure the growth of the school or of the system. It is therefore reasonable to argue that this year's students performed better or worse than last year's student and therefore should do better or worse at the higher grades.

Many of the usual examination administered in many countries are designed to show how far a student is above or below the average marks of the group with which he was being compared; and how far the average marks of the class or school were above or below the average or group with which they were being compared. At the same time, there is a marked difference between examinations designed for selection of students to the next grade or level, or those examinations designed to sort out students between the above-average and below-average groups; and test designed to measure how far the objectives of education were achieved. What needs to be stressed here however is that while traditional examinations relating to knowledge are usually designed to measure individual differences and to provide exact average makes for classes or schools, assessment exercises should aim at providing information on the overall progress of school children and not merely assemble data on the knowledge of the average child in school.

In Africa, most countries assess the outcomes of education through the traditional examinations or through standardized tests. In general it would appear that there is no difference between the two (traditional examinations and standardized tests), although such a difference appears to be one of form. But since the objectives of assessment pursued by both traditional examinations and standardized tests are different, the main difference between the two must lie in the techniques used. To this end therefore, examinations tend to judge the pupil in relation to others, whereas, the test tends to judge the manner in which the message had been conveyed.

Whatever measures we prefer to use, (tests or examinations) it must be emphasized that if the main aim of assessment is to determine the acquisition of knowledge and skills and the extent to which the value added by education has been attained, then there is need to select better measuring instruments and not just traditional examinations and tests. Evidence shows, however, that research in the selection of measuring instruments is far from complete. There is need for refinement.

One major problem of assessment of educational outcomes is that assessment of terminal pattern of skills and knowledge of the individual, must also reflect the expectations of society in which the individual lives or enters. To this effect then, it would be expected that an individual's worth was measurable prior to under-going an educational process so that upon completion of the educational programme, assessment instruments could measure the value added by computing the difference. But since we do not have such refined instruments to measure such a difference, and because there is generally a lack of clearly defined educational objectives, assessment can only remain superficial, that is, a certificate of performance in conformity with broad objectives as spelt out at national level. Provided the important criteria for assessment instruments are embodied - namely - objectivity, reliability and validity, present assessment procedures will continue to be used until better ones are devised.

IV.Conclusion

In this paper, it has been argued that the main task of education process is to change the learners in desirable ways. To this end, therefore, we need to define clearly the aims and long-term objectives of educational systems so as to help students change in the right direction. S secondly it has been pointed out that it is the primary task of teachers, administrators and curriculum planners to specify in precise terms the ways in which students will change by the learning process. Further we have argued that teachers are expected to make a series of decisions if they are to effectively help students change in the desired ways. We then postulated

that it is the role of evaluation to provide appropriate evidence to help both teachers and learners attain the goals of instructions, and hence the need for assessment. This situation is best explained in diagrammatic form as an instructional system design (Annex I), that is a system for learning. It is a decision making operation involving decisions about what should be learned, how, by whom, when and where, how learning should be evaluated and improved and what resources should be involved in preparing and providing for learning.

Thus in assessing student outcomes, we pointed out that evaluation instruments (especially summative evaluation instruments) offer an operational definition of the matrix of content and behaviours. Traditional examinations, therefore, administered at the end of a course or programme tend to be used as an appropriate evaluation instrument to determine what the students have learned by responding appropriately to questions and tasks situations given to them. In this way evaluation plays a vital role in providing both the teacher and society with the information needed to determine the extent to which students behaviours have changed. Unfortunately,evaluation techniques and measuring instruments need perfection if we are to derive satisfaction from both the individual's and society's points of view.

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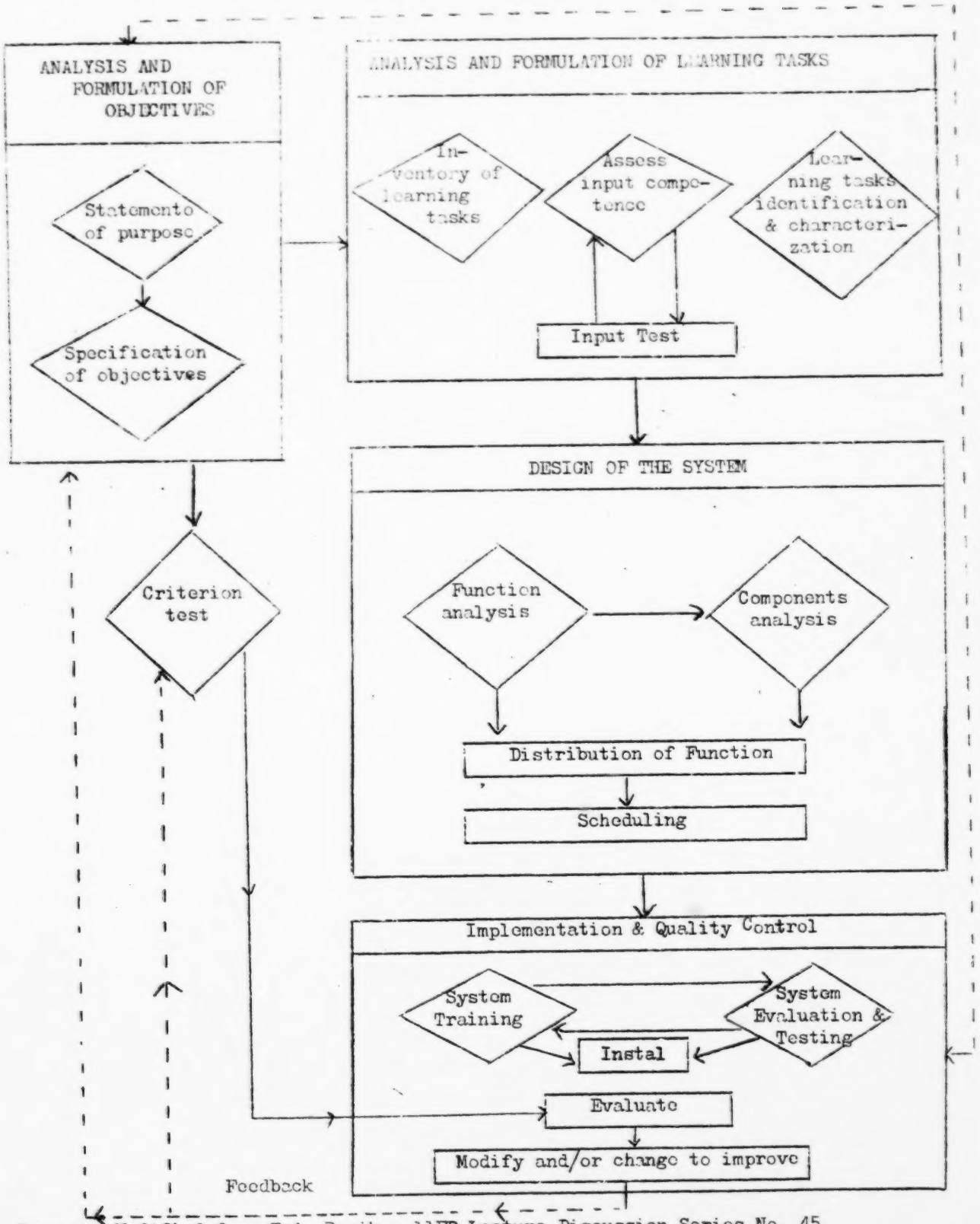

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